Clean Copy of the Claims
Following Entry of This Amendment

8. An integrated circuit sensor, comprising:

a comparator that receives an input signal, and compares said input signal against a plurality of predetermined threshold values and provides a plurality of comparator output signals each indicative of whether or not said input signal exceeds an associated one of said plurality of predetermined threshold values; and

an output stage that receives said plurality of comparator output signals and encodes state information associated with said plurality of comparator output signals to provide on a integrated circuit lead an encoded output signal indicative of said state information associated with said plurality of comparator signals.

9.(amended) The integrated circuit sensor of claim 8, wherein said output stage comprises means for generating said encoded output signal using pulse width modulation, wherein said state information is encoded within said encoded output signal based upon the pulse/pause ratio of said encoded output signal.

10. The integrated circuit sensor of claim 8, comprising:

a magnetic field transducer that generates and provides said input signal.

11. The integrated circuit sensor of claim 10, wherein said magnetic field transducer comprises a Hall effect transducer.

12. The integrated circuit sensor of claim 11, comprising a control unit that includes a memory device that stores and provides said plurality of predetermined threshold values.

13.(amended) The integrated circuit sensor of claim 12, wherein said memory device comprises a read/write memory device that allows said plurality of predetermined threshold values to be changed and stored in said read/write memory device.

14.(amended) The integrated circuit sensor of claim 12, comprising

means for reading updated predetermined threshold values that are input to said integrated circuit sensor through said integrated circuit lead that also receives said encoded output signal, and for storing said updated predetermined threshold values in said memory device, which provides said updated predetermined threshold values to said comparator for comparison against said input signal.

15.(amended) The integrated circuit sensor of claim 12, wherein said output stage receives said plurality of comparator output signals and encodes state information associated with said plurality of comparator output signals to provide an encoded output signal indicative of said state information associated with said plurality of comparator signals.

16. An integrated circuit sensor, comprising:

a transducer element that provides a transducer output signal;

a comparator that receives said transducer output signal, and compares a signal indicative of said transducer output signal against a plurality of adjustable threshold values and provides a plurality of comparator output signals each indicative of one of an associated plurality of switching states; and

an output stage that receives said plurality of comparator output signals and encodes switching state information associated with said plurality of comparator output signals to provide on a bi-directional integrated circuit lead an encoded output signal indicative of said state information associated with said plurality of comparator signals.

17.(amended) The integrated circuit sensor of claim 16, wherein said output stage comprises means for generating said encoded output signal using pulse width modulation, wherein said state information is encoded within said encoded output signal based upon the pulse/pause ratio of said encoded output signal.

18. The integrated circuit sensor of claim 16, wherein said transducer element comprises a magnetic field transducer that generates and provides said transducer output signal.

19.(amended) The integrated circuit sensor of claim 16, wherein said comparator comprises

hystersis on each of said predetermined threshold values.

20. An integrated circuit sensor, comprising:

a transducer element that provides a transducer output signal;

an amplifier that receives said transducer output signal and provides an amplified transducer output signal;

a comparator network that receives said amplified transducer output signal, and compares a signal indicative of said amplified transducer output signal against a plurality of adjustable threshold values to determine a state of said amplified transducer output signal, and provides a plurality of comparator output signals indicative of said state of said amplified transducer output signal; and

an output stage that receives said plurality of comparator output signals and encodes switching state information associated with said plurality of comparator output signals to provide on a integrated circuit lead an encoded output signal indicative of said state.

21. The integrated circuit sensor of claim 20, wherein said output stage comprises means for generating said encoded output signal using pulse width modulation, wherein data indicative of said state is encoded within said encoded output signal based upon the pulse/pause ratio of said encoded output signal.

22. The integrated circuit sensor of claim 20, wherein said transducer element comprises a magnetic field transducer.

23. The integrated circuit sensor of claim 21, comprising a control unit that includes a memory device that stores and provides said plurality of adjustable threshold values.

24. The integrated circuit sensor of claim 22, comprising a control unit that includes a memory device that stores and provides said plurality of adjustable threshold values.

REMARKS

Claims 9, 13-15, 17 and 19 have been amended. Claims 21-24 have been added. Claims 8-24 remain for further consideration.

The specification has been amended following the translation of the application from German to English. No new matter has been added.

A Proposed Drawing Amendment is also enclosed herewith to add an element number to FIG. 1 and an element number to FIG. 3.

The rejections shall be taken up in the order presented in the Official Action.

1. The title is objected to on the grounds that the title is not descriptive. The title has been amended.

2. Claims 8, 10, 11, 16 and 18-20 currently stand rejected for allegedly being anticipated by the subject matter disclosed in U.S. Patent 5,218,298 to Vig (hereinafter "Vig").

Claim 8

Claim 8 recites an integrated circuit sensor that includes a comparator that provides a plurality of comparator output signals to an output stage. The integrated circuit sensor also includes:

"an output stage that receives said plurality of comparator output

> signals and encodes state information associated with said plurality of comparator output signals to provide on a integrated circuit lead an encoded output signal indicative of said state information associated with said plurality of comparator signals." (emphasis added, cl. 8).

Significantly, the output stage provides an encoded output signal on a integrated circuit lead.

Vig discloses a magnetic field monitor that includes a Hall sensor. As illustrated in FIG. 4 of Vig, a decoder circuit 60 may include several selectable threshold values that are input to a single comparator within the three-threshold comparator (see col. 4, lines 33-43). Notably, referring still to FIG. 4 of Vig, the magnetic-field status binary signal on the line 64 is a Boolean signal. Vig neither discloses nor suggests whether the signal is encoded. Since the magnetic-field status binary signal on the line 64 is generated by the comparator 62, the signal will simply indicate whether or not the input value is above or below the comparator threshold value. Therefore, the signal on the line 64 in Vig is not encoded.

FIG. 5 of Vig discloses the use of a decoder 26 that provides a plurality of binary signal outputs on lines 51-53 to a circuit 72, which remembers the fault status of the sensors 10a, 10b, 10c and 10d, and the identity of an associated Hall sensor. (see col. 4, lines 60-65). The circuit 72 provides a binary magnetic field status signal on a line 74 (see col. 4, lines 63-65). Vig neither discloses (nor suggests) that the signal on the line 74 is an encoded signal.

FIG. 6 of Vig discloses the use of a plurality of decoder circuits 26a, 26b, 26c and 26d disposed in parallel and a plurality of binary magnetic field status signals 92-95 (col. 5, lines 4-29). Vig neither discloses (nor suggests) that these field status output signal are encoded. Therefore, FIGs. 4-6 of Vig neither disclose nor suggest the use of an encoded

output signal.

The integrated circuit sensor recited in claim 8 includes *"an output stage that receives said plurality of comparator output signals and encodes state information associated with said plurality of comparator output signals to provide on a integrated circuit lead an encoded output signal indicative of said state information associated with said plurality of comparator signals."* (emphasis added, cl. 8). Vig neither discloses nor suggests an output stage that encodes state information to provide an encoded output signal on a integrated circuit lead. Vig simply provides a Boolean signal indicative of a comparator output. A 35 U.S.C. §102 rejection requires that a single reference teach each and every element of the claimed invention. Hence, Vig is incapable of anticipating claim 8.

Claim 16

Claim 16 recites an integrated circuit sensor that includes a transducer element and a comparator. The integrated circuit element also includes:

> an output stage that receives said plurality of comparator output signals and encodes switching state information associated with said plurality of comparator output signals to provide on a bi-directional integrated circuit lead an encoded output signal indicative of said state information associated with said plurality of comparator signals. (emphasis added, cl. 16).

Vig does not disclose providing an encoded output signal, or any output signal, *on a bi-directional integrated circuit lead.* A 35 U.S.C. §102 rejection requires that a single reference teach each and every element of the claimed invention. Hence, Vig is incapable of anticipating claim 16.

Claim 20

Claim 20 recites an integrated circuit sensor that includes a transducer element, an amplifier and a comparator network. The integrated circuit sensor also includes:

> "an output stage that receives said plurality of comparator output signals and encodes switching state information associated with said plurality of comparator output signals to provide **on a integrated circuit lead** an encoded output signal indicative of said state." (emphasis added, cl. 20).

As set forth above with respect to claim 8, Vig neither discloses nor suggests an output stage that encodes state information to provide an encoded output signal on a integrated circuit lead. Vig simply provides a Boolean signal indicative of a comparator output. A 35 U.S.C. §102 rejection requires that a single reference teach each and every element of the claimed invention. Hence, Vig is incapable of anticipating claim 20.

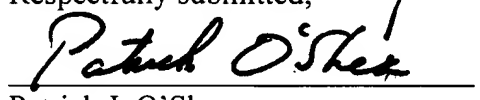
3. The indication that claims 9, 12-15 and 17 contain allowable subject matter is noted and appreciated.

These claims have not been rewritten into independent claim format since it is respectfully submitted that the independent claims from which they depend, either directly or indirectly, are allowable for at least the reasons set forth above.

For all the foregoing reasons, reconsideration and allowance of claims 8-24 is respectfully requested.

If a telephone interview could assist in the prosecution of this application, please call the undersigned attorney.

Respectfully submitted,



Patrick J. O'Shea
Registration No. 35,305
Samuels, Gauthier & Stevens LLP
225 Franklin Street, Suite 3300
Boston, Massachusetts 02110
Telephone: (617) 426-9180 x121